CONTENTS

Volume 22, Issue Nos 1–15

International Journal of ENERGY RESEARCH

Issue No. 1 JANUARY

Numerical Simulation of a Multi-layer Latent Heat Thermal Energy Storage System: P. Brousseau and M. Lacroix 1

The Dissolution Process of the NiO Cathodes for Molten Carbonate Fuel Cells: State-of-the-Art: S. Freni, F. Barone and M. Puglisi 17

Hydronic Heating Systems: Transient Modelling, Validation and Load Matching Control: M. Zaheer-Uddin and P. Monastiriakos 33

Environmental and Utility Planning Implications of Electricity Loss Reduction in a Developing Country: A Comparative Study of Technical Options: R. M. Shrestha and M. Azhar 47

Accounting for Rain Effects in Building Energy Estimation: S. E. G. Jayamaha, S. K. Chou and N. E. Wijeysundera 61

Experimental Performance of Ternary Solutions in an Absorption Heat Transformer: R. M. Barragan, V. M. Arellano, C. L. Heard and R. Best 73

A Semi-Empirical Model for Electric Defrosting of a Cylindrical Coil Cooler: S. A. Sherif and M. G. Hertz 85

Issue No. 2 FEBRUARY

Hydromagnetic Slip Flow of a Radiating Fluid with Hall Current. Part II: Fully Developed Flow with Axial Temperature and Concentration Variations: T. M. Abbey and I. U. Mbeledogu 93

Systematic Approach to Energy Rationalization in Island Communities: D. Fielden and J. K. Jacques . 107

An Analytical Solution of the Heat Transfer Process During Contact Melting of Phase Change Material Inside a Horizontal Elliptical Tube: W. Z. Chen, Q. S. Yang and S. M. Cheng 131

Computational Analysis of Coupled Radiation-convection Dissipative Non-gray Gas Flow in a Non-Darcy Porous Medium Using the Keller-box Implicit Difference Scheme: H. S. Takhar, M. Kumari and O. A. Bèg 141

A Simple Approach to Solve Conjugated Heat Transfer Problems in Circular and Parallel Plate Ducts: M. A. Al-Nimr 161

Short-term Thermal Performance of a Built-in Solar Storage for Frost Prevention in a Greenhouse: A. Kürklü 169

The Effects of the Design of the Cap of a Natural Gas-Fired Cooktop Burner on Flame Stability: J. E. Vierkant, J. F. Stubington, G. D. Sergeant and I. Tas 175

SHORT COMMUNICATION

Experimental Research on Hot State Selection of Pfbc-cc Gas Turbine Blade Coatings: Z. Zhaoping, D. Guosheng, Z. Mingyao, W. Xin, W. Shidong and X. Aiqun 185

Issue No. 3 MARCH

Experimental Investigation of a Combined Ejector-absorption Refrigerator: S. Aphornratana and I. W. Eames 195

A Study on the Design of Recuperative Burner: B. Park, D. Chung, W.-B. Kim and W. Kim 209

Simultaneous Frequency and Voltage Control of Wind-Diesel Power Systems Using Energy Storage: M. Mufti, R. Balasubramanian and S. C. Tripathy 221

Reciprocating Steam Engine Power Plants Fed by Woodwaste: G. Bidini, A. Manuali and S. Saetta .. 237

Effect of Combustion on the Economic Operation of Endoreversible Otto and Joule-Brayton Engine: N. C. Bera and S. Bandyopadhyay 249

Barriers to the Adoption of Efficient Electricity Technologies: A Case Study of India: B. S. Reddy and R. M. Shrestha 257

The Asymmetry of Gasoline Prices: Fresh Evidence from an Error Correction Model for UK and USA: M. Eltony 271

Experimental and Theoretical Performance of a Demonstration Solar Chimney Model–Part I: Mathematical Model Development: N. Pasumarthi and S. A. Sherif 277

Issue No. 4 MARCH

Time-Varying Heat Transfer from Adjacent Slab-on-Grade Floors: M. Krarti and O. Piot 289

The ANU Solar Thermal Steam Engine: Performance Analysis: P. Bannister 303

Experimental and Simulation Analysis of the Transient Operation of a Turbocharged Multi-Cylinder IDI Diesel Engine: C. D. Rakopoulos, E. G. Giakoumis and D. T. Hountalas 317

Evaluation of A Combined Ejector–Vapour-Compression Refrigeration System: D.-W. Sun 333

A Visualization Study on the Effect of Forcing Amplitude on Tone-Excited Isothermal Jets and Jet Diffusion Flames: S. K. Oh and H. D. Shin 343

An Investigation on the Dynamic Performance of Molten Cabonate Fuel-Cell Power-Generation Systems: W. He 355

Comparative Performance of HFC134a- and HCFC22-Based Vapour Absorption Refrigeration Systems: A. K. Songara, M. Fatouh and S. Srinivasa Murthy 363

On the Use of ECLIPSE Code for Optimizing Industrial Processes: M. Caldas, J. Santos and V. Semião 373

Issue No. 5 APRIL

Indian Fertiliser Industry: Assessment of Potential Energy Demand and CO_2 Emissions: A. Das and T. C. Kandpal 383

Performance Simulation of Heat Recovery Steam Generators in a Cogeneration System: R. Karthikeyan, M. A. Hussain, B. V. Reddy and P. K. Nag 399

Exergy Analysis of Latent Heat Storage Systems with Sensible Heating and Subcooling of PCM: A. V. Ramayya and K. N. Ramesh 411

Theoretical Comparison of Single Stage and Advanced Absorption Heat Transformers Operating with Water/Lithium Bromide and Water/Carrol Mixtures: W. Rivera, M. J. Cardoso and R. J. Romero .. 427

Experimental and Theoretical Performance of a Demonstration Solar Chimney Model—Part II: Experimental and Theoretical Results and Economic Analysis: N. Pasumarthi and S. A. Sherif 443

Air Cycle Cooling and Heating Part II: A Mathematical Model for the Transient Behaviour of Fixed Matrix Regenerators: J. S. Fleming, L. Li and B. J. C. van der Wekken 463

Thermodynamic and Electrical Properties of Dry Combustion Plasma: A. M. George and A. K. Das .. 477

Issue No. 6 MAY

On the Emissions from Internal-Combustion Engines: A Review: A. A. Abdel-Rahman 483

Impact of Kiln Losses on a Dehumidifier Drier: P. Bannister, B. Bansal, C. G. Carrington and Z. F. Sun 515

Energy Conservation of Residential Buildings in Beirut: N. Ghaddar and A. Bsat 523

Transient Simulation of Conventional Hybrid Photovoltaic/Thermal (PV/T) Air Heating Collectors: H. P. Garg and R. S. Adhikari 547

Entropy Analysis of Wet Surface Cooling System for Air Flow: A. Seppälä and M. J. Lampinen 563

Saturated Liquid Thermal Conductivity Correlations for Some New Refrigerants: K. Srinivasan and L. R. Oellrich 579

Issue No. 7 JUNE

Energy Analysis of the Sugar Production Process from Sugar Beets: T. Tekin and M. Bayramoğlu ... 591

Thermodynamic Studies on HFC134a–DMA Double Effect and Cascaded Absorption Refrigeration Systems: A. K. Songara, M. Fatouh and S. Srinivasa Murthy 603

Empirical Heat Transfer and Frost Thickness Correlations During Frost Deposition on a Cylinder in Cross-Flow in the Transient Regime: S. Sengupta, S. A. Sherif and K. V. Wong 615

Experimental Study of a Refrigerant Charged Solar Collector: N. Ghaddar and Y. Nasr 625

Air Cycle Cooling and Heating Part 1: A Realistic Appraisal and a Chosen Applications: J. S. Fleming, B. J. C. van der Wekken, J. A. McGovern and R. M. van Gerwen 639

A Model of the Combustion of a Single Small Coal Particle Using Kinetic Parameters Based on Thermogravimetric Analysis: D. Vamvuka and E. T. Woodburn 657

Capital Budgeting Process for Electric Power Utilities–An Analytic Hierarchy Process Approach: H.-J. Son and K. J. O. Min 671

Issue No. 8 JUNE

Potentials of Wind Energy Development for Water Desalination in Jordan: M. S. Mohsen and B. A. Akash 683

Cost Minimization for a Local Utility Through CHP, Heat Storage and Load Management: D. Henning 691

Comparison of Methanol Based Working Fluid Combinations for a Bubble Pump-Operated Vapour Absorption Refrigerator: R. Saravanan and M. P. Maiya 715

Study on a Solar-Driven Ejection Absorption Refrigeration Cycle: J. Wang, G. Chen and H. Jiang ... 733

Recent Researches in Indirect Evaporative Cooler III: Optimization of the Cooling Potential of a Room-Coupled Indirect Evaporative Cooler: T. R. Tulsidasani, R. L. Sawhney, S. P. Singh and M. S. Sodha 741

Experimental Study of Ice Storage Performance in an Office Building: L. Schibuola 751

An Integrated Domestic Refrigerator and Hot Water System: J. M. O'Brien, P. K. Bansal and R. R. Raine 761

Issue No. 9 JULY

Sizing of a Multi-tank Solar Water Heater: M. S. Sodha, G. N Tiwari, R. L. Sawhney, A. K. Sharma, A. K. Singh and R. K. Goyal 777

Performance Study of a Double-Absorption Water/Calcium Chloride Heat Transformer: R. M. Barragán R, V. M. Arellano G and C. L. Heard 791

Efficiency Bound of a Solar-driven Stirling Heat Engine System: J. Chen, Z. Yan, L. Chen and B. Andresen 805

Modelling and Parametric Analysis of Heat and Mass Transfer Performance of Refrigerant Cooled Liquid Desiccant Absorbers: A. Y. Khan and F. J. Sulsona 813

Application of Probability Models to Malaysian Sunshine Data: M. Y. Sulaiman, W. M. Hlaing OO, M. A. Wahab and A. Zakaria 833

Modelling of Capillary Tubes Behaviour with HCFC 22 Ternary Alternative Refrigerants: S. M. Sami, B. Poirier and A. B. Dahamani 843

Issue No. 10 AUGUST

Optimization of Four-colour Photothermal Converters used for Power Generation on Interplanetary Stations: C. A. Dinu and V. Badescu 857

Transient Analysis of Energy Storage in a Thermally Stratified Water Tank: J. E. B. Nelson, A. R. Balakrishnan and S. Srinivasa Murthy 867

Investigation of the Bubble Behaviour at the Free Surface of a Large Three-dimensional Gas Fluidised Bed: A. Hepbasli 885

Flow Characteristics of Circulating Gas–solid Fluidized Bed Heat Exchanger with Multiple Vertical Pipes: S. I. Park, K. B. Choi and B. S. Moon 911

Environmental Emission Mitigation Potential of Efficient Electrical Appliances in Sri Lanka: R. M. Shrestha, W. J. L. S. Fernando and R. Shrestha 923

Issue No. 11 SEPTEMBER

Experiments on Heat-regenerative Adsorption Refrigerator and Heat Pump: R. Z. Wang, Y. X. Xu, J. Y. Wu and W. Wang 935

A Process Simulation Model for a 2 Ton h^{-1} Incinerator (A Combined Bed Combustion and Furnace Heat Transfer Model): W. Yang, D. Shin and S. Choi 943

Investigation of the Performance of a Cross-flow Turbine: H. Olgun 953

Heat and Mass Transfer Model of a Ground Heat Exchanger: Validation and Sensitivity Analysis: M. Piechowski 965

Experimental Study on Fluidized-bed Start-up Process with Hot Gas: W. Xin, Z. Changsui, D. Yufeng and C. Xiaoping 981

Theoretical Limits on the Performance of Stirling Engines: J. R. Senft 991

Optimal Performance of Double-effect Series Flow Vapour Absorption Refrigeration Systems with New Working Fluids: M. B. Arun, M. P. Maiya and S. Srinivasa Murthy 1001

Issue No. 12 OCTOBER

Development of a Low-cost Oxy-hydrogen Bio-fuel Cell for Generation of Electricity Using NOSTOC as a Source of Hydrogen: S. Dawar, B. K. Behera and P. Mohanty 1019

Development of a Three-part Time-of-day Electrical Energy Tariff: S. S. Ahmed and A. K. M. Tafazzal Hossain 1029

Interconnected Operation of Small-hydroelectric and Diesel Power System: D. Das, S. K. Aditya and S. Ghosh 1039

Energy Analysis of the Steel Making Industry: M. S. Mohsen and B. A. Akash 1049

A Simplified Approach to Solving Conjugate Heat Transfer Problems in Annular and Dissimilar Parallel Plate Ducts: M. A. Al-Nimr 1055

Performance of Some Zeotropic Mixtures as Alternative Refrigerants to R22 and R502: G. Venkatarathnam and S. S. Murthy 1065

Optimal Unit Sizing of Fuel Cell Cogeneration Systems in Consideration of Performance Degradation: K. Ito, S. Gamou and R. Yokoyama 1075

A Photovoltaic Utilization System with Bang-bang Self-adjusting Maximum Energy Tracking Controller: A. M. Sharaf, A. Ismail, R. A. El-Khatib and S. I. Abu-Azab 1091

Experimental Analysis of the Absorption and Desorption Rates of $HCOOK/H_2O$ and $LiBr/H_2O$: S. B. Riffat, S. E. James and C. W. Wong 1099

Issue No. 13 OCTOBER

Experimental Comparison of a Solar-assisted Heat Pump Vs. A Conventional Thermosyphon Solar System: P. Axaopoulos, P. Panagakis and S. Kyritsis 1107

Optimization Model for Energy Generation from Agricultural Residue: P. Kanniappan and T. Ramachandran 1121

A Residential End-use Energy Consumption Model for Canada: H. Farahbakhsh, V. I. Ugursal and A. S. Fung 1133

Finite Element Analysis of the Flow and Heat Transfer of Solid Particles in Moving Beds: W-S. Lee, S-K. Youn and S-I. Park 1145

Investigation on Adsorption Refrigeration with a Single Adsorbent Bed: W. Wang, R. Z. Wang, Y. X. Xu, J. Y. Wu and Y. B. Gui 1157

Simulation Model of the Thermal Performance of a Natural Convection-type Solar Tunnel Dryer: H. P. Garg, R. Kumar and G. Datta 1165

Performance Analysis of a Refrigeration Cycle Using a Direct Contact Evaporator: T. Kiatsiriroat, P. Siriplubpla and A. Nuntaphan 1179

Design, Development and Testing of a Novel Non-tracking Solar Cooker: N. M. Nahar 1191

The Effect of Viscous Dissipation on the Performance of a Recuperator: A. Z. Sahin 1199

Issue No. 14 NOVEMBER

Weather Data for Building Energy Cost-benefit Analysis: L. Bellia, P. Mazzei and A. Palombo 1205

Modeling of Combustion Characteristics and NO_x Emission in Highly Preheated and Diluted Air Combustion: J. Yuan and I. Naruse 1217

Design Nomogram for Long-term Performance Prediction of Integrated Collector-Storage (ICS) Solar Water Heater: H. P. Garg, G. Datta and P. Avanti 1235

Convection-based Model for a PCM Vertical Storage Unit: K. A. R. Ismail and C. A. Melo 1249

Load Management Measures in a Carpentry Factory: S.-I. Gustafsson 1267

Neutral Convection and Entropy Generation in a Square Cavity: B. S. Yilbas, S. Z. Shuja, S. A. Gbadebo, H. I. Abu Al-Hamayel and K. Boran 1275

A Simplified Solution Technique for Some Fluid Flow and Heat Transfer Problems: M. A. Antar 1291

Performance Analysis of an Irreversible Cogeneration Heat Pump Cycle: S. Göktun 1299

Issue No. 15 DECEMBER

A Worldwide Perspective on Energy, Environment and Sustainable Development: I. Dincer and M. A. Rosen 1305

A Feasibility Study of Steam-jet Refrigeration: S. A. Sherif, D. Y. Goswami, G. D. Mathur, S. V. Iyer, B. S. Davanagere, S. Natarajan and F. Colacino 1323

Thermal Analysis of Roof-spray Cooling: J. A. Clements and S. A. Sherif 1337

Numerical Computation of a Circulating Fluidized Bed Combustor: L. Huilin, B. Rushan, Y. Lidan, Z. Guangbo and T. Xiu 1351

Estimation of Bed Expansions in a Freely-bubbling Three-dimensional Gas-fluidized Bed: A. Hepbasli 1365

Studies on Semi-cylindrical Solar Tunnel Dryers: Year Round Collector Performance: H. P. Garg and R. Kumar 1381

AUTHOR INDEX 1397

KEY WORD INDEX 1399